

CLAIMS

1. A spread spectrum communications receiver, comprising a matched filter for correlating a received sample sequence with a known sample sequence, the receiver having:

a first synchronisation mode, in which the filter is used divided into segments; and

a second synchronisation mode, in which the filter is used undivided.

2. A receiver as claimed in claim 1, wherein each segment provides a respective output accumulation value, the receiver comprising switch means, wherein the switch means:

in the first synchronisation mode, are in a first position in which the powers of the output accumulation values are added; and

in the second synchronisation mode, are in a second position in which the output accumulation values are summed, and the power of the summed output accumulation values is calculated.

3. A receiver, for use in a telecommunications system in which transmissions are sent from a plurality of base stations, the receiver comprising:

receiver circuitry, for detecting transmissions from base stations;

a filter, for detecting a correlation between detected transmissions from base stations and a known code, the filter including a plurality of filter segments; and

control circuitry, for switching the filter between a first synchronisation mode, in which the filter is used divided into segments, when a frequency deviation between a frequency of the transmissions and an expected frequency can be relatively large, and a second synchronisation mode, in which the filter is

used undivided, when the frequency deviation is limited.

4. A receiver as claimed in claim 3, wherein the control circuitry switches the filter into the first synchronisation mode when the receiver is first detecting transmissions from a base station to achieve synchronisation therewith, and into the second synchronisation mode when the receiver is synchronised with one base station and is detecting transmissions from an alternative base station.

5. A receiver as claimed in claim 3, for use in a CDMA telecommunications system, wherein the filter detects a correlation between Long Code Masked symbols transmitted from base stations and the known code.

6. A receiver as claimed in claim 3, comprising means for detecting a power of a correlation between detected transmissions from base stations and a known code,

wherein, in the first synchronisation mode, the powers of the correlations of the filter segments are detected and added together to form an output value, and, in the second synchronisation mode, the correlations of the filter segments are added together and the power of the added correlations is detected, to form an output value.

7. A method of controlling a receiver, for use in a telecommunications system in which transmissions are sent from a plurality of base stations, the method comprising:

detecting transmissions from base stations;  
using a filter, for detecting a correlation between detected transmissions from base stations and a known code, the filter including a plurality of filter segments; and

switching the filter between a first

synchronisation mode, in which the filter is used divided into segments, when a frequency deviation between a frequency of the transmissions and an expected frequency can be relatively large, and a  
5 second synchronisation mode, in which the filter is used undivided, when the frequency deviation is limited.

8. A method as claimed in claim 7, comprising switching the filter into the first synchronisation mode when the receiver is first detecting transmissions from a base station to achieve synchronisation therewith, and into the second synchronisation mode when the receiver is synchronised with one base station and is detecting transmissions from an alternative base station.  
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9. A method as claimed in claim 7, for use in a CDMA telecommunications system, wherein the filter detects a correlation between Long Code Masked symbols transmitted from base stations and the known code.

10. A method as claimed in claim 7, comprising, in the first synchronisation mode, detecting the powers of the correlations of the filter segments and adding them together to form an output value, and, in the second synchronisation mode, adding  
20 together the correlations of the filter segments and detecting the power of the added correlations, to form an output value.

11. A method as claimed in claim 10, further comprising detecting a synchronisation position of the  
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30 transmissions based on the output value.